

## Report of RAA Interaction Meeting on 9<sup>th</sup> January 2016 at IIT Kanpur

RAA Meeting with Govt school teachers on 9<sup>th</sup> January was an excellent event. These Govt school teachers are very good and interactive and our efforts can make a big change. A total of 70 teachers coming from places as far as 60 km and from about 25 schools, participated in the event. They started coming around 10 am as announced. Our sessions started at 10.30 AM and went till 1 PM.

10 AM to 10.30 AM was for Tea/Snacks. In this period the teachers freely expressed their experiences with IIT Kanpur faculty and their wonderful friendly attitude towards learning teaching. During these informal chats, many of the teachers told that they got information from the school authorities only few hours ago or at best in the previous evening, Still due to their enthusiasm, they could make it. However, some of the teachers coming from distant regions could not make it in time and were disappointed to miss some of the sessions.



### 1. Initial meeting

Teachers assembled in L-12 Lecture Hall. The spirits were very high and they were keen to express it by telling how the previous meeting on November 14 had enthused them to take up various experimental activities in their schools. After a brief interaction monitored by Dr H C Verma, the teachers were divided in groups and the corresponding resource persons took them to respective lecture halls for subject specific interaction. The groups were

- (a) Junior High School Science and Maths
- (b) High School and Inter Physics
- (c) High School and Inter Chemistry
- (d) High School and Inter Mathematics
- (e) High School and Inter Biology

### 2. Group Interaction Meetings

#### (a) Junior High School

Dr Arnab Bhattacharya and Dr Raghunath Tiwari, both faculty from Computer Science Engineering Department, gave some interesting Mathematics insights in the form of playing with numbers and geometrical figures. He told them some special techniques to get areas of such figures. Teachers were very receptive and kept asking questions. Some of them came to the Board and worked out some number related problems there.



Mr Amit Bajpai and Mr Anurag Pandey from Shiksha Sopan gave science demonstrations with very live discussions to enhance their understanding. Each experiment was like a puzzle and through lots of debate, it was resolved. The main

topics were Force and Pressure. With examples from daily life situations these concepts were made more familiar to them.

The most attractive part of this session was a Pump made from used toothpaste tube. The pump was very simple to operate and was easily taking water from a vessel up and throwing from its mouth. Teachers were very eager to construct it themselves. They were told that they should not throw the empty toothpaste tubes and once everyone comes with such an empty tube we will have a session on making them.

Another hit part was variation of buoyancy as an object is taken deeper in water. The fact that it does not depend on depth was surprising for almost all. It was like a puzzle and when they understood the concepts, it was a lovely experience.

#### (b) High School and Inter Physics

Dr Anshu Gaur of Mechanical Engineering Department had done lot of pre planning and the interaction was supposed to be focused on electrostatics concepts and do some experiments. However the discussion flowed in the direction of conductivity, semiconductors, bands etc. Some of the teachers got this opportunity to clarify these concepts which are not so nicely understandable through textbooks. Dr H C Verma led the discussion on these topics. Dr Rajiv Shekhar of Materials Science and Engineering Department participated in discussion making it more intense and useful.



Some experiments on electrostatics were performed in the final 15-20 minutes. Mr Ranjit Kumar from Shiksha Sopan helped in assembling and performing the experiments. Teachers were very happy to see that concepts can be so easily demonstrated through such low cost experiments.

#### (c) High School and Inter Chemistry

Resource persons for Chemistry group were Ms Piyali, Dr Madhav V Ranganathan from Chemistry Department and Dr Anand Subramaniam from Materials Science and Engineering Department. They had done very good plans beforehand and also a structure in which they would like to take this program ahead. Targeting of misconceptions was especially appreciated by teachers. The discussion was mainly around mole concepts.

#### (d) High School and Inter Mathematics

Dr Bhaskar Dasgupta of Mechanical Engineering Department handled the interaction single handedly. With many interesting sequences, identities with numbers and his own interesting delivery, it was a treat to sit in this class. Dr Bhaskar Dasgupta has many interesting mathematical puzzles and he presents them in very lucid manner.



### (e) High School and Inter Biology

This was also very interesting interaction. Dr Amitabh Bandyopadhyay, Dr Pradip Sinha and Dr Nitin Gupta, all faculty from Bio Science and Bio Engineering Department gave interactive sessions to the teachers. With presentations on varieties of flies and mosquitoes, the three Professors developed a good personal communication channel with the teachers. After the session was over, Dr Amitabh Bandyopadhyay took the teachers to his lab that must have thrilled the teachers.

### 3. Some Highlights

\*One of the teachers came with her baby of few months. She was taking care of the baby as well as attending the sessions and interacting.

\*The Officer in charge Rashtriya Madhyamik Shiksha Abhiyan, Dr Piyush Dwivedi was present during the entire program. He was amazed at the quality of this interaction which they had rarely seen in Govt teachers training programs.

\*One of the teachers Preeti Pandey (coming from a place in Billhoor, ~50km from IITK) told us that she will be on Medical leave in the next month (February), but she would not like to miss this interaction. She was asking for permission to attend the February interaction even though officially she will be on leave from her school.

\*BSA Kanpur called us during the event to ask about number of teachers reached. He assured a much better communication to schools for February meeting to ensure larger participation. RSMA Officer too was very enthusiastic and assured us for more teachers going the program.

### 4. Concluding Session

After the group sessions were over, teachers again assembled in L-12. Dr H C Verma prompted teachers to share what new they learned in group meetings. Several teachers from different groups told their experiences and praised for the effort by IIT Kanpur team. They were very enthusiastic and promised to take the ideas to their classrooms.

